ENCELIUM® Wall-Mounted Occupancy Sensors

Modern occupancy sensors use digital technology to ensure that the occupants in a room have light when they are present and that lighting energy is saved when the room is unoccupied.

Depending on the application, either single technology or multi-technology sensors are appropriate to maximize occupant and energy manager satisfaction.

ENCELIUM single-technology Passive Infra-Red (PIR) sensors are a cost-effective option for small and large spaces when major motion is available. The multi-technology option adds an active Ultrasonic (U/S) sensor to the PIR sensor to increase minor motion sensitivity in critical applications like single-occupant offices and restrooms.

Key Features & Benefits

— **State of the Art Sensors:** Large lens area for Passive Infra-Red (PIR) sensor and optional Ultrasonic (U/S) sensor provides a wide variety of space coverage options. (From 1200 to 2500 sq. ft., see Ordering Information table.)

— **Models optimized for specific applications:**

– **Long Range:** Supports major-motion coverage out to 100 feet.

– **High Bay Aisle:** Supports mounting heights up to 30 feet with coverage out to 55 feet (at 20 foot mounting height).

— **Flexible Base Mounting:** Easy wall or ceiling mount with low-voltage connection and twist-lock attachment for 360° directional flexibility.

— **Flexible Timer Settings:** Automatic – 30 seconds – 30 minutes. Includes installer test mode with 6 seconds auto exit programming.

— **Adaptive Learning with Local Protected Memory:** Sensor self-calibrates to optimize performance and retains settings during power interruptions.

— **Low Voltage Operation:** Uses ENCELIUM PPK Series Power Pack with Class 2, 24 volt wiring. Multiple sensors can control single or multiple power packs.

— **Convenient AC Power Base Adapter Option:** Make any ENCELIUM low-voltage ceiling sensor a line-voltage sensor and avoid bulky external power-packs. (see PBA-015)

— **Integrated Daylight Hold-OFF Light Sensor:** Avoid wasting energy when there is enough natural light.

— **Auto-Adapting Mode:** Sensor's digital system continually analyzes and adjusts the sensitivity and time delay.

— **Walk-Through Mode:** Provides increased energy savings by decreasing the time delay to 2.5 minutes when someone momentarily walks through the monitored space.

Application Information

Applications

— Cafeterias
— Classrooms
— Computer rooms
— Conference rooms
— Day care centers
— Executive and private offices (U/S model)
— Filing rooms
— Hallways (PIR model)

— Loading docks (PIR model)
— Offices with cubicles
— Open areas
— Open warehouses
— Parking garages (PIR model)
— Partitioned restrooms
— Stairwells (PIR model)
— Storage rooms
— Workspaces

For Greater Savings

Combine with the ENCELIUM Energy Management System to gain considerable energy savings in addition to occupancy sensing:

— **Polaris 3D® Software** enables the addition of Daylight-Harvesting, Time Scheduling, Task Tuning, Variable Load Shedding and Personal Control for significantly greater energy savings.

— **Software Remapping:** any sensor to any zone

— **Software Adjustable:** Extended time-out

— **Connects directly** to ENCELIUM Sensor Interface Module

— **BACnet Interface (optional):** Occupancy sensing for building automation, HVAC, security, traffic data, etc.

For more information on the ENCELIUM Energy Management System, refer to LMS075 – ENCELIUM BROCHURE.

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Ordering Information

Item Number	Ordering Description	Sensing Technology(ies)	Sensing Angle (degrees)	Coverage (ft² or LxW)	Large/Small Motion Range (ft)	Application	Current Required (mA)
45368	SWP-WV00	PIR	110	2500	68/31	Wall/Ceiling	15
45369	SWM-1200	PIR + U/S	110	1200	68/31	Wall/Ceiling	25
45370	SWP-LRNG	PIR	26	100 x 33	Large: 100	Long Range	15
45371	SWP-HBAY	PIR	7.3	55 x 7	Large: 55	High Bay Aisle	15
45376	PBA-015 Power Base Adapter, 120-277VAC, 15A						

Adaptive Learning Scenarios

Real-World Scenario	Adaptive Learning Reaction
An installer accidentally leaves the sensor in the 6 sec. timer test mode and the lights may go OFF or ON every 6 sec.	The sensor automatically resets the timer to 10 min. after 15 min. of test mode.
The sensor detects movement in a nearby corridor or hallway and the room lights turn ON.	After an initial movement is sensed, if another movement is not sensed within the timer setting then the delayed OFF time setting is automatically reduced.
The sensor does not detect movement because an occupant sits virtually motionless at a desk and the lights turn OFF.	If motion is sensed within a short period after the lights go OFF, then the current delayed OFF-time setting is increased.

DIP Switch Settings

Switch	Switch Functions	Switch Settings	Switch Settings	Factory Settings
	BANK A	OFF	ON	—
A1 (U/S Only)	Mode	Multi-Tech	Single-Tech	Multi-Tech
A2 (U/S Only)*	PIR or U/S Select	PIR Only (if in single-tech mode, see A1)	U/S Only (if in single-tech mode, see A1)	—
A3	Manual Mode	Auto Adapting Enabled	Auto Adapting Disabled	Auto Adapting Disabled
A4	Walk-Thru Disable	Walk-Thru Enabled	Walk-Thru Disabled	Walk-Thru Disabled
	Bank B			
B1	Override to ON	Auto Mode	Lights forced ON	Auto Mode
B2	Override to OFF	Auto Mode	Lights forced OFF	Auto Mode
B3	Test Mode	OFF▸ON▸OFF to start Test Mode. Auto-exits after 15 min.	—	—
B4	LEDs Disabled	LEDs Enabled	LEDs Disabled	LEDs Enabled

* Applicable only when in Single Tech mode (A1 ON)

Sensor Specifications (SWM and SWP Models)

Sensor Electrical Specifications:

— **Power Requirements:** 24VDC, works with PPK Power Pack or PBA Power Base Adaptor

— **Power Consumption:** See Current Required (mA) in Ordering Information

— **Output:** 24VDC active high logic control signal with short circuit protection

Control Specifications:

— **U/S Sensitivity:** 0 to 100%; green knob (U/S models only)

— **PIR Sensitivity:** 0 to 100%; red knob

— **Light Sensor:** 20 to 3,000 Lux.; blue knob (Connect gray wire to blue PPK wire for Light Sensor function)

— **Time Delay:** 30 seconds–30 minutes; black knob (Factory setting: 10 minutes)

Indicator Specifications:

— **Red LED:** Motion detected with PIR sensor

— **Green LED:** Motion detected with U/S sensor (U/S models only)

Environmental Specifications:

— **Operating Temperature Range:** 32°F to 104°F (0°C to 40°C)

— **Relative Humidity:** 0% to 95% non-condensing, for indoor use only
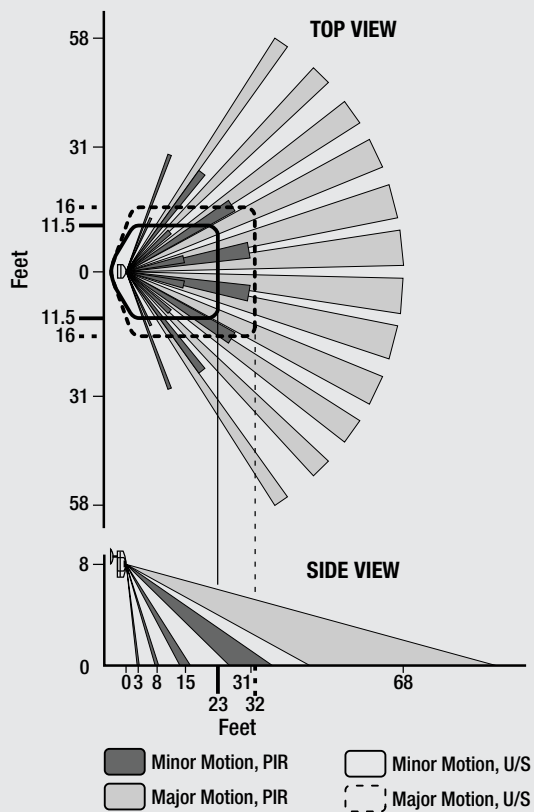
Physical Specifications:

— **Size:** Base Diameter: 4.2" (107mm); Overall Length: 6.43" (163mm)

— **Weight:** 6oz (171g)

— **Wire Length:** 6" (160mm)

— **Color:** White
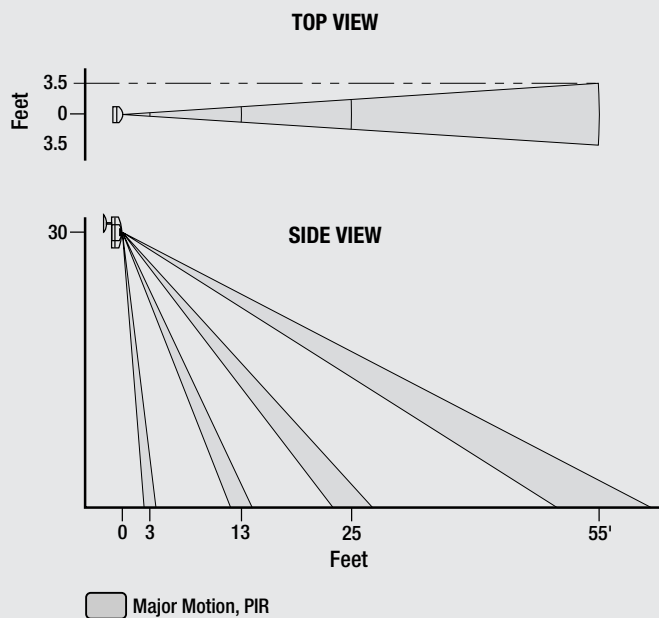
— **Housing:** Rugged, high-impact, UV inhibitors

Other Specifications:

— **Mounting Height:** 8-10 feet, 10-40 feet (SWP-HBAY Only)

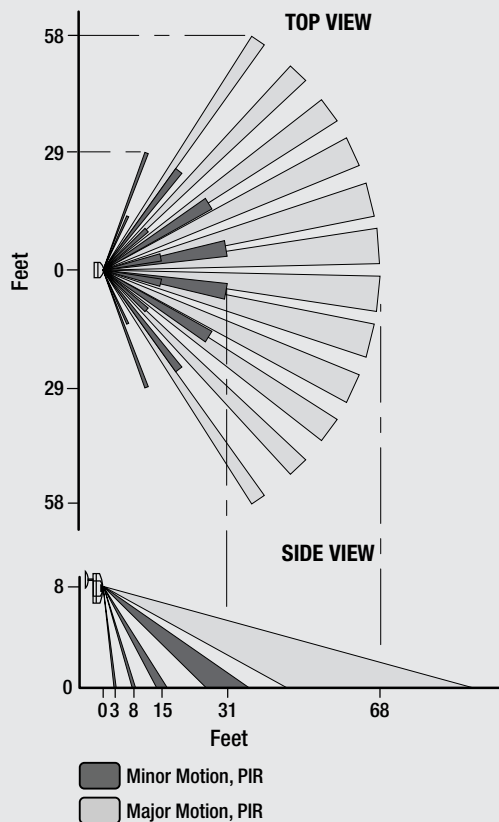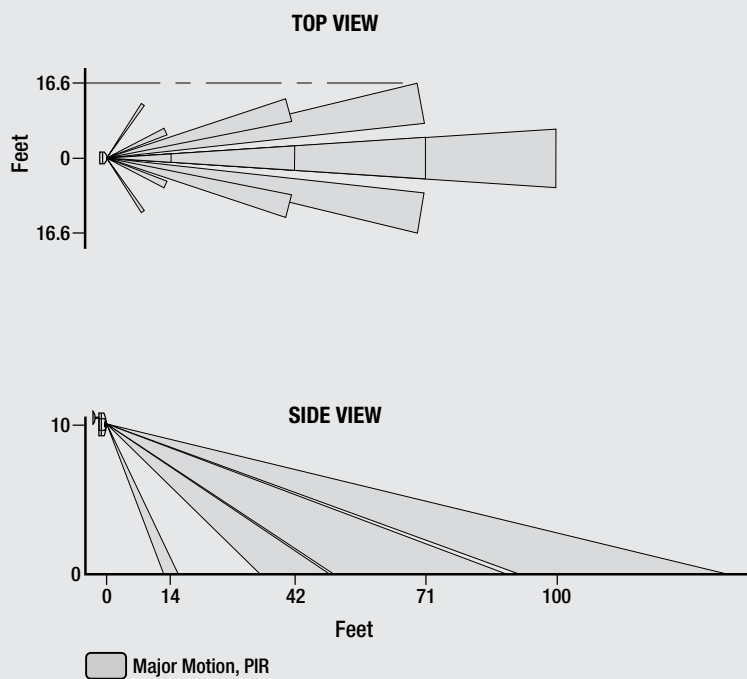— **Listings:** cUL/US Certified, meets ASHRAE Standard 90.1 and CEC Title 24 requirements
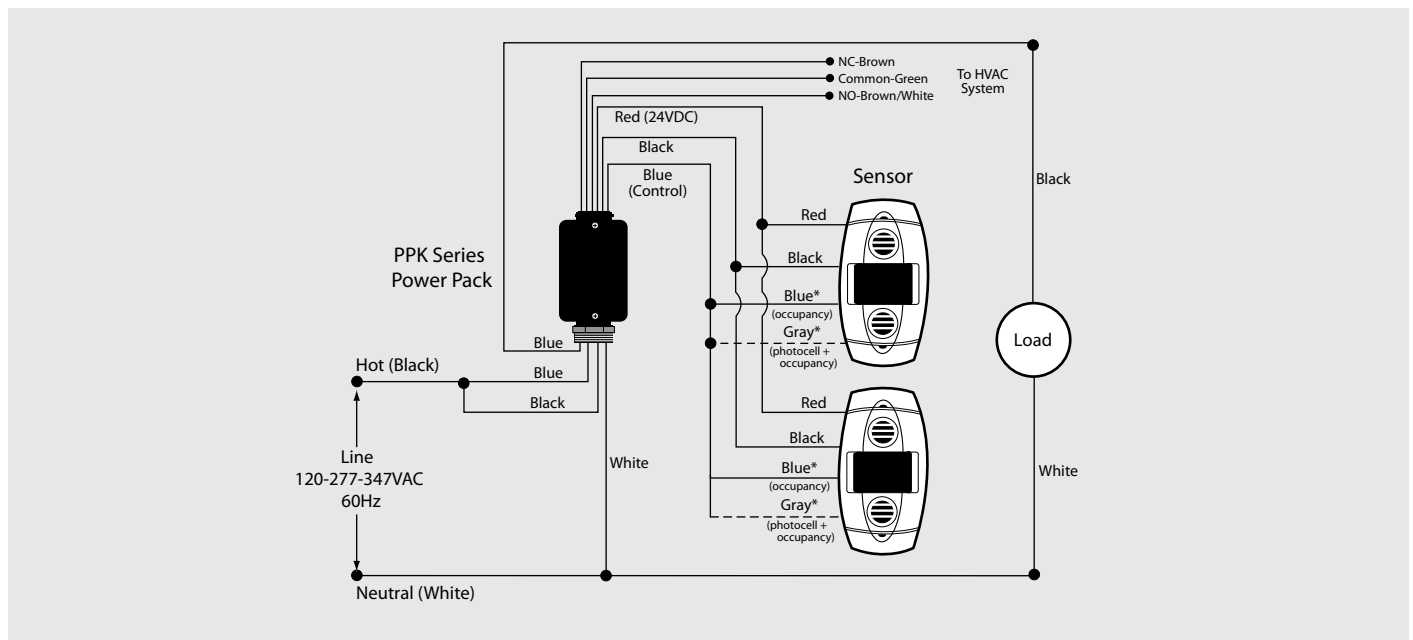
SWM-1200, 1,200 sq. ft.

Legend (SWM-1200):
- Minor Motion, PIR
- Major Motion, PIR
- Minor Motion, U/S
- Major Motion, U/S

SWP-HBAY, 55 linear ft.

Legend (SWP-HBAY):
- Major Motion, PIR

SWP-WV00, 2,500 sq. ft.

Legend (SWP-WV00):
- Minor Motion, PIR
- Major Motion, PIR

SWP-LRNG, 100 linear ft.

Legend (SWP-LRNG):
- Major Motion, PIR

Wiring Diagram

PPK Series Power Pack

NC-Brown
Common-Green
NO-Brown/White
To HVAC System

Red (24VDC)
Black
Blue (Control)

Sensor

Red
Black
Blue* (occupancy)
Gray* (photocell + occupancy)

Blue
Hot (Black)
Blue
Black

Red
Black
Blue* (occupancy)
Gray* (photocell + occupancy)

Line 120-277-347VAC 60Hz

White

Neutral (White)

Black

Load

White

Dimensions, Adjustment Range and Mounting

Dimensions

4.67" (118.62mm)
4.23" (107.44mm)
6.43" (163.32mm)
Long Range Lens
2.80" (71.12mm)

Adjustment Range

60°
85°

Mounting Bracket

Mounting Base
Base Cover
Sensor
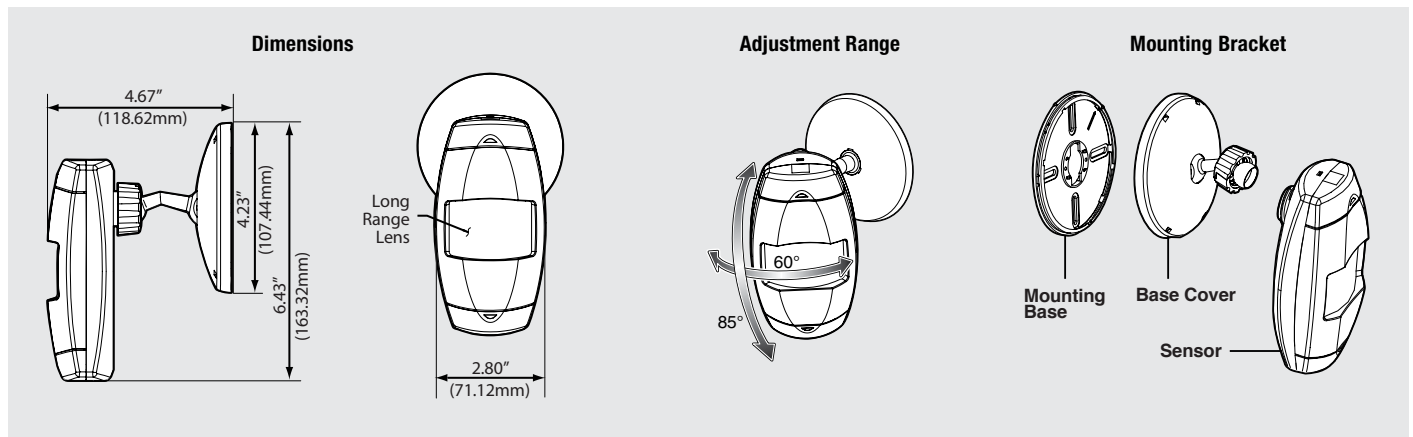
Power Base Adapter Specifications (PBA-015)

Electrical Specifications:

— **Input Voltage:** 120-277Vac @ 50/60Hz
— **Output Voltage:** 24Vdc, 40mA nominal
— **Load Rating:** 15A Incandescent, Electronic or Magnetic Fluorescent Ballast; 3/4 HP at 120V
— **Wire Designation:** Line-Black, Load-Blue, White-Neutral
— **Power Consumption (base only):**
Lights ON: 120V – 1.58W, 277V – 2.34W
Lights OFF: 120V – .27W, 277V – 1.04W

Environmental Specifications:

— **Operating Temperature Range:** 32°F to 104°F (0°C to 40°C)
— **Relative Humidity:** 0% to 90% non-condensing, for indoor use only
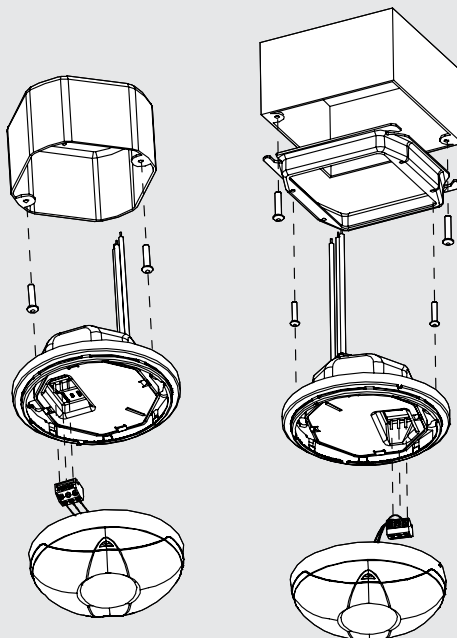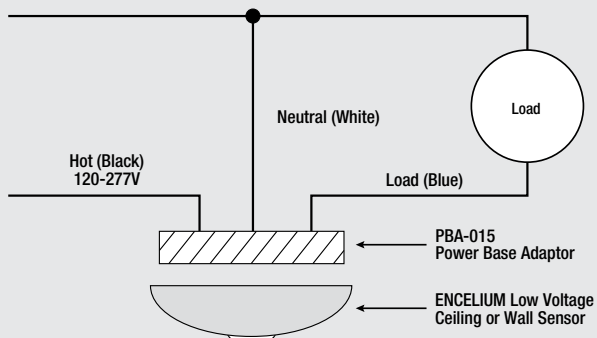
Physical Specifications:

— **Case:** High impact plastic
— **Relay:** Class B (130°C) insulating material. Silver alloy contacts switching power supply – 120/230/277 Vac
— **Wire:** 6" (152.40mm) leads 14 AWG input, two-part terminal block output
— **Size:** 4.5" (114.3mm) dia. x 1.75" (44.45mm)deep
— **Color:** White

Other Specifications:

— **Agency Standards and Compliance:** UL and cUL Listed, CEC Title-24

Installation and Wiring

Connect and mount the PBA-015 to the electrical box. Using the terminal block, connect the low voltage sensor. Match the arrows on the sensor to the base and twist to lock. Test the sensor for correct operation.

Load

Neutral (White)

Hot (Black)
120-277V

Load (Blue)

PBA-015
Power Base Adaptor

ENCELIUM Low Voltage
Ceiling or Wall Sensor

Warranty

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